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September 5, 2019

Via Electronic Filing

Public Utility Commission of Oregon
Attention: Filing Center
201 High Street SE, Suite 100
P.O. Box 1088
Salem, OR 97308-1088

Re: **UE 359 – PORTLAND GENERAL ELECTRIC COMPANY, 2020 Annual Power Cost Update Tariff (Schedule 125)**

Dear Filing Center:

On behalf of Portland General Electric Company ("PGE"), Staff of the Public Utility Commission of Oregon ("Staff"), the Oregon Citizens' Utility Board ("CUB"), and the Alliance of Western Energy Consumers ("AWEC"), enclosed for electronic filing today in the above-named docket are the following:

- Motion to Admit Stipulation
- Stipulation
- Joint Testimony in Support of the Net Variable Power Cost Stipulation

Thank you for your assistance. If you have any questions, please do not hesitate to call me.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Tingey".

Douglas C. Tingey
Associate General Counsel

DCT:hp
Enclosure

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 359

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY

2020 Annual Power Cost Update Tariff
(Schedule 125)

MOTION TO ADMIT STIPULATION

Pursuant to OAR 860-001-0350(7), Portland General Electric Company (“PGE”) moves to admit into the record in this proceeding the Stipulation, dated September 4, 2019. PGE also moves that the following Joint Testimony in support of the Stipulation be admitted into the record as evidence in this proceeding:

Testimony and Exhibits	Witnesses
Stipulating Parties	Scott Gibbens, OPUC William Gehrke, CUB Lance Kaufman, AWEC Mike Niman, PGE

DATED this 5th day of September, 2019.

Respectfully submitted,



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BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 359

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY

2020 Annual Power Cost Update Tariff
(Schedule 125)

STIPULATION

This Stipulation is between Portland General Electric Company ("PGE"), Staff of the Public Utility Commission of Oregon ("Staff"), the Oregon Citizens' Utility Board ("CUB"), and the Alliance of Western Energy Consumers ("AWEC") (collectively, the "Stipulating Parties").

PGE filed this Annual Power Cost Update Tariff filing on April 1, 2019, for 2020 net variable power costs ("NVPC"). The filing included the minimum filing requirements required by Schedule 125 and testimony and exhibits. PGE also provided to Staff and other parties work papers in support of its filing. Since that time, Staff and intervening parties have submitted numerous data requests obtaining additional information. On June 25, 2019, Staff, CUB and AWEC filed their opening testimony in this docket. On July 16, 2019, PGE filed reply testimony. On July 25, 2019, the Stipulating Parties participated in a settlement conference. As a result of those discussions, the Stipulating Parties have reached a compromise settlement of all issues in this docket, as described in detail below.

TERMS OF STIPULATION

1. This Stipulation resolves all issues in this docket.
2. Western Energy Imbalance Market (“Western EIM”), California-Oregon Border (“COB”) Trading Margins, Wind Capacity Factor, Gas Optimization, and any remaining issues not identified below. The Stipulating Parties agree that the 2020 forecast NVPC will be reduced by \$7.0 million in a compromise settlement of the Western EIM, COB trading margins, wind capacity factor, gas optimization and all other issues not specifically addressed below. In addition, the Stipulating Parties agree to the following:
 - a. The Stipulating Parties will not propose changes to PGE’s wind forecast methodology until PGE’s next general rate case (“GRC”).
 - b. PGE will remove the transmission derate within the COB trading margin forecast methodology.
 - c. PGE will hold a workshop with the other Stipulating Parties on gas optimization prior to PGE’s initial 2021 Schedule 125 NVPC filing. Presentation materials, including any workpapers used in developing the presentation materials, will be provided to the parties no later than two weeks prior to the date of the workshop.
 - d. PGE agrees that it will propose a method for forecasting gas optimization modeling in the initial 2021 NVPC filing, which will be informed by the workshop discussed above.
3. Qualifying Facilities. The Stipulating Parties agree to continue to use PGE’s Qualifying Facilities (“QF”) track and true-up mechanism approved in PGE’s 2019 NVPC filing (Order No. 18-405), with the following modifications:

- a. PGE will derate the expected generation of new QFs that have not achieved commercial operation by November 1st of each year.¹ Additionally, PGE will make reasonable efforts to update any known changes to QF commercial operation dates (“CODs”) between November 2nd and PGE’s final November MONET update. The energy derate will be based on the most recent four-year historical annual average of actual versus projected QF costs, which for the 2020 NVPC forecast translates into a 54% derate of the expected generation of new QFs.
- b. In addition to on-line dates, the QF track and true-up mechanism will true-up actual QF generation to the final forecast of QF generation for all forecasted QF projects that have not achieved commercial operation, consistent with the projects identified in part (a) above.
- c. Cure period payments will no longer be included in the QF track and true-up mechanism.
- d. Including the above modifications, the revised methodology is as follows:
 - i. PGE will update the QF CODs through the final (November 15th) MONET update in each year’s power cost proceeding. PGE will update all project CODs through November 1st and make reasonable efforts to update any known changes to QF CODs between November 2nd and PGE’s final November MONET update.
 - ii. PGE will derate the expected generation of new QFs that have not been identified as having achieved commercial operation by PGE’s final November

¹ This will allow PGE time to process the data related to QF CODs and ensure they are reflected in the final November 15 NVPC update.

MONET update. The energy derate will be based on the most recent four-year historical annual average of actual costs versus projected QF costs.

- iii. PGE will continue to file deferred accounting applications to defer the difference between actual and forecasted QF costs to recover or credit the variance in QF costs in the next power cost proceeding.
- iv. The variance to be refunded or collected from customers will be determined by re-running the final November 15th NVPC MONET forecast and replacing (1) the estimated QF CODs with actual recorded CODs and (2) the forecast QF generation for projects subject to the derate in part (ii) above with actual QF generation.

4. Boardman 2020 Operations.

- a. PGE will move the Boardman 100% maintenance derate in MONET modeling from October 1 through December 31, 2020, to the period November 1 through December 31, 2020.
- b. PGE will model the Boardman 2020 starting coal pile at the 2019 GRC delivered coal cost including commodity, rail transportation, and dust suppression costs.

5. Wheatridge. The Stipulating Parties agree that PGE will not include a forecast of variable costs and benefits related to the Wheatridge Renewable Energy Facility in the 2020 NVPC forecast.

6. Standard Inputs in MONET. The Stipulating Parties agree that PGE will round thermal plant forced outage rates to the nearest two decimal places.

7. Inflation Rate in MONET. The Stipulating Parties agree that PGE will not adjust the inflation rate used in MONET for the 2020 NVPC forecast. The Stipulating Parties further

agree that PGE will use the inflation rate modeled in PGE's most recently acknowledged Integrated Resource Plan for future annual power cost proceedings.

8. Short Term Direct Access. There will be no adjustment related to Short Term Direct Access load in the 2020 NVPC forecast.
9. The Stipulating Parties recommend and request that the Commission approve the adjustments and provisions described herein as appropriate and reasonable resolutions of all issues in this docket.
10. The Stipulating Parties agree that this Stipulation is in the public interest, and will contribute to rates that are fair, just and reasonable, consistent with the standard in ORS 756.040.
11. The Stipulating Parties agree that this Stipulation represents a compromise in the positions of the Stipulating Parties. Without the written consent of all of the Stipulating Parties, evidence of conduct or statements, including but not limited to term sheets or other documents created solely for use in settlement conferences in this docket, are confidential and not admissible in the instant or any subsequent proceeding, unless independently discoverable or offered for other purposes allowed under ORS 40.190.
12. The Stipulating Parties have negotiated this Stipulation as an integrated document. The Stipulating Parties, after consultation, may seek to obtain Commission approval of this Stipulation prior to evidentiary hearings. If the Commission rejects all or any material part of this Stipulation, or adds any material condition to any final order that is not consistent with this Stipulation, each Stipulating Party reserves its right: (i) to withdraw from the Stipulation, upon written notice to the Commission and the other Parties within five (5) business days of service of the final order that rejects this Stipulation, in whole or material

part, or adds such material condition; (ii) pursuant to OAR 860-001-0350(9), to present evidence and argument on the record in support of the Stipulation, including the right to cross-examine witnesses, introduce evidence as deemed appropriate to respond fully to issues presented, and raise issues that are incorporated in the settlements embodied in this Stipulation; and (iii) pursuant to ORS 756.561 and OAR 860-001-0720, to seek rehearing or reconsideration, or pursuant to ORS 756.610 to appeal the Commission's final order. Nothing in this paragraph provides any Stipulating Party the right to withdraw from this Stipulation as a result of the Commission's resolution of issues that this Stipulation does not resolve.

13. This Stipulation will be offered into the record in this proceeding as evidence pursuant to OAR 860-001-0350(7). The Parties agree to support this Stipulation throughout this proceeding and in any appeal, provide witnesses to support this Stipulation (if specifically required by the Commission), and recommend that the Commission issue an order adopting the settlements contained herein. By entering into this Stipulation, no Stipulating Party shall be deemed to have approved, admitted or consented to the facts, principles, methods or theories employed by any other Stipulating Party in arriving at the terms of this Stipulation. Except as provided in this Stipulation, no Stipulating Party shall be deemed to have agreed that any provision of this Stipulation is appropriate for resolving issues in any other proceeding.
14. This Stipulation may be signed in any number of counterparts, each of which will be an original for all purposes, but all of which taken together will constitute one and the same agreement.

DATED this 5th day of September, 2019.



PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

OREGON CITIZENS' UTILITY BOARD

ALLIANCE OF WESTERN
ENERGY CONSUMERS

DATED this 3RD day of September, 2019.

PORTLAND GENERAL ELECTRIC
COMPANY



STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

OREGON CITIZENS' UTILITY BOARD

ALLIANCE OF WESTERN
ENERGY CONSUMERS

DATED this 3rd day of September, 2019.

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON



A handwritten signature in purple ink, appearing to be 'Michael P. ...', is written over a horizontal line.

OREGON CITIZENS' UTILITY BOARD

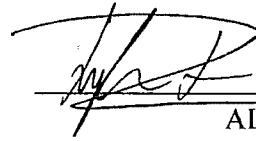
ALLIANCE OF WESTERN
ENERGY CONSUMERS

DATED this 4th day of September, 2019.

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

OREGON CITIZENS' UTILITY BOARD

A handwritten signature in black ink, appearing to be "M. J. ...", written over a horizontal line.

ALLIANCE OF WESTERN
ENERGY CONSUMERS

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

**UE 359
Annual Update Tariff**

PORTLAND GENERAL ELECTRIC

**Joint Testimony in Support of the
Net Variable Power Cost Stipulation**

Direct Testimony of
Scott Gibbens, OPUC
William Gehrke, CUB
Lance Kaufman, AWEC
Mike Niman, PGE

September 5, 2019

Table of Contents

I. Introduction..... 1

II. Stipulated Issues..... 3

III. Pricing 14

IV. Recommendation to the Commission..... 16

IV. List of Exhibits 17

I. Introduction

1 **Q. Please state your names and positions with your respective organizations.**

2 A. My name is Scott Gibbens. I am a Senior Economist for the Public Utility Commission of
3 Oregon (OPUC) Staff. My qualifications appear in Staff Exhibit 101.

4 My name is William Gehrke. I am an Economist for the Oregon Citizens' Utility Board
5 (CUB). My qualifications appear in CUB Exhibit 101.

6 My name is Lance Kaufman. I am an independent consultant testifying on behalf of the
7 Alliance of Western Energy Consumers (AWEC). My qualifications appear in AWEC
8 Exhibit 201.

9 My name is Mike Niman. I am the Manager of Financial Analysis for Portland General
10 Electric (PGE). My qualifications appear in PGE Exhibit 100.

11 **Q. What is the purpose of your testimony?**

12 A. Our purpose is to describe and support the stipulation (Stipulation) between OPUC Staff
13 (Staff), CUB, AWEC, and PGE (Stipulating Parties) resolving all issues identified by the
14 Stipulating Parties related to PGE's 2020 forecast of net variable power costs (NVPC). A
15 copy of the Stipulation is provided as Stipulating Parties Exhibit 101.

16 **Q. What is the basis for the Stipulation?**

17 A. PGE filed its initial forecast of 2020 NVPC on April 1, 2019 as part of its Annual Update
18 Tariff (AUT) filing (UE 359). PGE's NVPC forecast was updated on July 15, 2019.¹ On
19 June 4, 2019, parties held a workshop to discuss issues and review PGE's Multi-Area
20 Optimization Network Energy Transaction power cost forecasting model (MONET). Staff,

¹ PGE will provide three more 2020 NVPC forecast updates on October 1, November 6, and November 15.

1 AWEC, and CUB submitted opening testimony on June 25, 2019 and PGE filed reply
2 testimony on July 16, 2019. The parties held settlement discussions on July 9 and July 25,
3 2019. At the July 25 meeting, parties reached an agreement that they found reasonable for
4 settlement. The Stipulation reached at the July 25 meeting resolves all issues raised by parties
5 in this docket (UE 359).

6 **Q. What power cost issues were raised by Staff, AWEC, and CUB in testimony and resolved**
7 **in this settlement?**

8 A. The issues that were raised and settled are related to:

- 9 • Western Energy Imbalance Market (Western EIM or EIM);
- 10 • California-Oregon Border (COB) Trading Margins;
- 11 • Wind Resource Capacity Factor;
- 12 • Gas Optimization;
- 13 • Qualifying Facilities;
- 14 • Boardman 2020 Operations;
- 15 • Wheatridge Project;
- 16 • Standard Inputs in MONET;
- 17 • Inflation Rate in MONET;
- 18 • Short Term Direct Access.

19 We explain the resolution of each of these issues below.

20 **Q. Are there any remaining issues not addressed in the Stipulation?**

21 A. No. The Stipulation addresses and settles all issues in Docket No. UE 359.

II. Stipulated Issues

A. Western EIM, COB Trading Margin, Wind Capacity Factor, and Gas Optimization

1 Q. Please describe the issue regarding the Western EIM.

2 A. Both Staff and AWEC raised concerns regarding PGE's method to forecast benefits resulting
3 from the participation in the Western EIM. To address their concerns, Parties provided the
4 following recommendations:

5 1. Staff recommended that PGE use the most recent 12 months of data available to update
6 Western EIM sub-hourly dispatch benefits.

7 2. AWEC argued that loss-generating transactions from the fifteen-minute market (FMM)
8 and five-minute market (also known as Real Time Dispatch or RTD) should be removed
9 from the 2018 data used to develop PGE's 2020 forecast.

10 3. Both Staff and AWEC argued that PGE's greenhouse gas award forecast is too low and
11 that a reduction of the 2018 revenues used to develop the 2020 forecast, based on a
12 reduction in award quantities, over-estimates the effect of market changes on GHG awards.
13 To address the GHG issue, both Staff and AWEC recommended that PGE use the most
14 recent 12 months of data to forecast GHG award benefits, while Staff also proposed a
15 higher escalation factor, than PGE's 7.5%, be used.

16 Q. Did PGE respond to the arguments raised by Staff and AWEC regarding the Western 17 EIM?

18 A. Yes. In summary, PGE argued that parties' recommendations were: (1) inconsistent with the
19 California Independent System Operator (CAISO) market design by removing all EIM losses
20 from the method to calculate a 2020 Western EIM benefit; (2) contradicting the AUT/PCAM
21 construct by forecasting EIM benefits without acknowledging variable power cost losses; or

1 (3) targeting the change in the GHG market rules as the only change impacting the EIM GHG
2 market in 2020, when in fact there are other changes that may increase the supply of zero cost
3 GHG offered in the market and place downward pressure on GHG prices.

4 **Q. Please describe the issue regarding the COB Trading Margins.**

5 A. AWEC raised concerns regarding PGE's method for forecasting benefits attributable to
6 trading activity at COB and proposed a different methodology of calculating these benefits.
7 AWEC calculated a margin by using PGE's historical day-ahead COB transactions valued
8 against a Mid-Columbia (Mid-C) hourly real-time price. AWEC then proposed to adjust
9 PGE's COB margin forecast to the three-year average they calculated. Additionally, both
10 AWEC and Staff argued against PGE including a forecasted transmission derate in the COB
11 method, based on historical BPA derates on the California-Oregon intertie (COI).

12 **Q. Did PGE respond to the issues that AWEC raised with regards to the COB Trading**
13 **Margins?**

14 A. Yes. PGE argued that PGE's current method of forecasting COB Trading Margins provides
15 for a normalized and forecasted value that recognizes both seasonality and variability.
16 Additionally, PGE calculated an actual margin using three years of day-ahead transaction data
17 for COB, valued against Mid-C day-ahead prices, that is in-line with PGE's 2020 forecasted
18 value. PGE, however, did agree to forgo the inclusion of a transmission derate within the
19 COB trading margin forecast methodology.

20 **Q. Please describe the issue regarding the Wind Resource Capacity Factor.**

21 A. Both Staff and AWEC raised concerns regarding PGE's originally forecast versus actual
22 capacity factors for utility-owned wind facilities. To address their concerns, Staff
23 recommended PGE's wind capacity factor forecast be calculated: 1) using the average of the

1 original expected capacity factor at the time of project development and actual capacity factor
2 of the project; or 2) by expanding PGE’s current rolling average of actuals method from five
3 years to ten. AWEC recommended PGE’s wind capacity factor forecast be calculated using
4 a 75/25 blend between the resources’ original request for proposal (RFP) estimates and actual
5 wind capacity factors.

6 **Q. Did PGE respond to the arguments raised by Staff and AWEC regarding the Wind**
7 **Capacity Factor?**

8 A. Yes. PGE argued that: (1) PGE’s current, approved forecasting method of using a rolling
9 five-year average of generation provides for a more accurate and normalized forecast of wind
10 energy production; and (2) parties’ proposed methods of forecasting wind energy production
11 require modeling changes that are outside of the power cost updates allowed through PGE’s
12 Schedule 125 tariff.

13 **Q. Please describe the issue regarding Gas Optimization.**

14 A. AWEC proposed that PGE include gas optimization margins in NVPC forecasts. AWEC
15 based their proposed gas optimization methodology on the assumption that PGE’s access to
16 extra-regional gas markets and its access to the North Mist Gas Storage facility (North Mist)
17 provide PGE with opportunities to optimize gas activities and produce a significant monetary
18 benefit through purchases and sales between gas hubs.²

19 **Q. Did PGE respond to the issues that AWEC raised with regards to Gas Optimization?**

20 A. Yes. PGE argued that AWEC’s adjustment related to gas optimization is overstated given
21 PGE’s actual gas transportation rights and gas storage flexibility.

22 **Q. Have parties resolved these issues in this settlement?**

² Sumas, AECO, Malin, and Rockies gas markets.

1 A. Yes. For settlement purposes, PGE will reduce its 2020 NVPC forecast by \$7.0 million related
2 to the issues as a group described above and any other NVPC issues not separately identified
3 in the Stipulation or this testimony. Parties agreed that the \$7.0 million reduction to PGE's
4 2020 NVPC forecast and the agreement regarding the four items below represent appropriate
5 and reasonable resolutions for these issues. Parties also agreed to the following:

- 6 1. PGE's method to calculate Western EIM benefits will not change within UE 359.
- 7 2. PGE's method of forecasting COB trading margins will not change within UE 359;
8 however, PGE agreed to forgo the inclusion of a transmission derate within the COB
9 trading margin forecast methodology.
- 10 3. PGE's method of forecasting wind capacity factor will not change within UE 359.
11 Furthermore, parties agree to refrain from proposing changes to PGE's wind forecast
12 methodology until PGE's next general rate case (GRC).
- 13 4. PGE will not change its modeling of gas purchases or sales within UE 359; however,
14 PGE will:
 - 15 a) Hold a workshop with other parties on gas optimization prior to PGE's initial 2021
16 NVPC filing. Presentation materials, including any work papers used in developing
17 the presentation materials, will be provided to parties no later than two weeks prior
18 to the date of the workshop;
 - 19 b) Propose a method for forecasting gas optimization modeling in the initial 2021
20 NVPC filing, which will be informed by the workshop discussed above.

21 All parties do not necessarily agree with the methods that will be used within UE 359.
22 However, the parties agree to the use of these methods as part of a settlement of the issues
23 in this case.

B. Qualifying Facilities (QFs)

1 **Q. Please describe the issue regarding QFs.**

2 A. OPUC Staff and AWEC raised concerns regarding the modeling of QFs in MONET and
3 provided the following recommendations:

4 1) OPUC Staff recommended that:

5 a. PGE apply a percentage derate on forecast QF generation derived from historical
6 new QFs costs compared to new QFs forecast costs.

7 b. Augment the true up mechanism to include projected MWh generation vs actual
8 MWh generation.

9 2) AWEC recommended that:

10 a. PGE model QF generation using a contract delay rate (CDR) method similar to
11 the method employed by PacifiCorp.

12 b. Alternatively, AWEC recommended adding two more steps to the end of PGE's
13 track and true up mechanism:

14 i. Calculate the NVPC rate difference resulting from actual Commercial
15 Operation Dates (CODs).

16 ii. Multiply the NVPC rate difference by actual billing determinants for
17 2020.

18 **Q. Did PGE respond to the issues that parties raised regarding the modeling of QFs in
19 MONET?**

20 A. Yes. PGE agreed with Staff's recommendations and opposed AWEC's. In response to
21 AWEC's recommendations, PGE argued that the QF tracking mechanism provides the
22 simplest, most straightforward, and most accurate method for ensuring that accurate online

1 dates are properly reflected in customer prices. In contrast, the CDR method does not
2 accurately forecast the actual online delivery dates for new QFs and puts significantly more
3 risk on PGE related to the QF online dates. To AWEC's second recommendation provided in
4 part (b) above, PGE argued that PGE must take the delivered net output at contracted fixed
5 prices from QFs, regardless of retail customer loads. Therefore, the contract price and
6 delivered net output, not billing determinants, determine the cost.

7 **Q. Have parties resolved this issue in this settlement?**

8 A. Yes. Parties agreed to continue the use of PGE's existing track and true-up mechanism, with
9 the following modifications:

10 1) PGE will derate the expected generation of new QFs that have not achieved commercial
11 operation by November 1st of each year.³ Additionally, PGE will make reasonable efforts
12 to update any known changes to QF CODs between November 2nd and PGE's final
13 November MONET update. The energy derate will be based on the most recent four-year
14 historical annual average of actual costs versus projected QF costs, which for the 2020
15 NVPC forecast translates into a 54%⁴ derate of the expected generation of new QFs.

16 2) In addition to on-line dates, the QF track and true-up mechanism will true up actual QF
17 generation to the final forecast of QF generation for all forecasted QF projects that were
18 not identified as having achieved commercial operation by PGE's final November
19 MONET update.

20 3) Cure payments will no longer be included in the QF track and true-up mechanism. Parties
21 agreed to remove QF cure payments from the track and true-up mechanism because they

³ This will allow PGE time to process the data related to QF CODs and ensure they are reflected in the final November 15 NVPC update.

⁴ See Staff Exhibit 400, page 2-3, Table 1.

1 are make-whole payments that PGE receives from QFs for replacement power purchased
2 by PGE from the market during the one-year default period after QFs fail to achieve
3 commercial operation.

4 **Q. Please provide the QF track and true-up method subject to the modifications described**
5 **above.**

6 A. Including the above modifications, the revised method is as follows:

7 1) PGE will update the QF CODs through the final (November 15th) MONET update in each
8 year's power cost proceeding. PGE will update all project CODs through November 1st
9 and make reasonable efforts to update any known changes to QF CODs between
10 November 2nd and PGE's final November MONET update.

11 2) PGE will derate the expected generation of new QFs that have not been identified as
12 having achieved commercial operation by PGE's final November MONET update. The
13 energy derate will be based on the most recent four-year historical annual average of actual
14 costs versus projected QF costs.

15 3) PGE will continue to file deferred accounting applications to defer the difference between
16 actual and forecasted QF costs to recover or credit the variance in QF costs in the next
17 power cost proceeding.

18 4) The variance to be refunded or collected from customers will be determined by re-running
19 the final November 15th NVPC MONET forecast and replacing (1) the estimated QF
20 CODs with actual recorded CODs and (2) the forecast QF generation for projects subject
21 to the derate in part 2) above with actual QF generation.

C. Boardman 2020 Operations

22 **Q. Please describe the issue regarding Boardman Operations in 2020.**

1 A. All parties to this docket provided comments or recommendations on PGE’s proposal
2 regarding the modeling of Boardman operations in 2020.

3 1) OPUC Staff expressed its support of PGE’s proposal to return to customers any potential
4 benefits realized from running Boardman in Q4 of 2020. OPUC Staff will continue to
5 monitor the status of available coal inventory.

6 2) CUB opposed PGE’s proposal to defer and return to customers any potential benefits
7 realized from running Boardman in Q4 of 2020. CUB argued that the potential benefit
8 should instead be subject to PCAM deadbands.

9 3) AWEC recommended that PGE:

10 a. Adjust the 2020 NVPC forecast by removing costs related to Boardman Non-
11 Running Station Service (NRSS) in Q4 2020.

12 b. Adjust 2020 NVPC by modeling the Boardman 2020 starting coal pile at the 2019
13 GRC coal cost.

14 c. Related to Boardman 2020 supply constraints, AWEC recommended that PGE:

15 i. Implement plant capacity derates related to Trona supply constraints prior
16 to coal supply constraints.

17 ii. Implement 100% derates for enough hours to address coal supply
18 constraints.

19 iii. Perform plant shutdowns in 2019 to build the coal stockpile for 2020.

20 iv. Allow Boardman to operate in Q4 2020 while the coal supply lasts.

21 **Q. Have parties reached an agreement regarding PGE’s proposal to defer and return any**
22 **potential benefits realized from Boardman running in Q4 of 2020?**

1 A. Yes. Parties agreed that this issue will not be dealt with in this AUT filing but rather at the
2 time of PGE's deferred accounting application filing.

3 **Q. Did PGE respond to the arguments raised by parties regarding Boardman 2020**
4 **Operations?**

5 A. Yes. PGE argued that: (1) Boardman NRSS should not be removed from PGE's 2020 NVPC
6 forecast since it is an ongoing operation and maintenance cost associated with an in-service
7 asset; and (2) other proposed adjustments related to Boardman 2020 planned operations either
8 require changes to plant parameters that are not allowed updates under PGE Schedule 125, do
9 not provide a material benefit, are not necessary due to the July 15 NVPC market price curve
10 updates, or represent actions that PGE is already performing.

11 **Q. Have parties resolved all the remaining issues related to Boardman 2020 Operations in**
12 **this settlement?**

13 A. Yes. To settle all the remaining issues related to Boardman 2020 Operations, parties agreed
14 that PGE will model October 2020 as the last month of Boardman available/planned operation
15 instead of September 2020, as modeled in PGE's April 1 NVPC initial filing. Consequently,
16 PGE will move the Boardman 100% maintenance derate in MONET from October 1 through
17 December 31, 2020, to the period November 1 through December 31, 2020. Furthermore,
18 parties agreed that PGE will model the Boardman 2020 starting coal pile at the 2019 GRC
19 delivered coal cost, including commodity, rail transportation, and dust suppression costs. The
20 currently estimated impact to the 2020 NVPC forecast related to the changes in Boardman
21 2020 Operations modeling is a power cost reduction of approximately \$0.9 million.

D. Wheatridge Renewable Energy Facility (Wheatridge)

1 **Q. Please describe the issue regarding Wheatridge.**

2 A. Staff recommended that Wheatridge variable costs and benefits be forecast and reflected in
3 PGE's 2020 AUT rather than within a Renewable Resource Automatic Adjustment Clause
4 (RAC) filing.

5 **Q. Have parties resolved this issue in this settlement?**

6 A. Yes. Parties agreed that PGE will not include a forecast of variable costs and benefits related
7 to Wheatridge in the 2020 AUT. Based on PGE's contract guarantees regarding both the
8 owned- and PPA-based portions of Wheatridge, the wind resources are currently expected to
9 be placed in service at the end of 2020, with a guaranteed COD of December 31, 2020. As
10 such, including all costs and benefits within a RAC filing through Schedule 122 ensures that,
11 should Wheatridge come into service prior to December 31, 2020, customers will receive the
12 most current forecast of benefits, while incurring the most current expectation of costs
13 commensurate with the actual online date of the project.

E. Standard Inputs in MONET

14 **Q. Please describe the issue regarding Standard Inputs in MONET.**

15 A. Staff raised concerns regarding PGE's approach to round to one decimal place the average of
16 historical forced outage rates when determining the test year forced outage rates for PGE
17 thermal plants. To address their concern, Staff recommended that PGE round forecasted
18 forced outage rates to two decimal places instead of one.

19 **Q. Have parties resolved this issue in this settlement?**

20 A. Yes. Parties agreed that PGE will round thermal plant forced outage rates to the nearest two
21 decimal places.

F. Inflation Rate in MONET

1 **Q. Please describe the issue regarding the inflation rate used in MONET.**

2 A. CUB recommended that PGE use a 2% inflation rate instead of the 2.5% used in MONET.

3 CUB based its argument on the fact that PGE used a 2% general inflation rate in the 2016
4 Integrated Resource Plan (IRP) filing and PGE should synchronize the inflation rate between
5 annual power cost and IRP filings.

6 **Q. How did parties resolve this issue in this settlement?**

7 A. Parties agreed that PGE will use the inflation rate modeled in PGE's most recently
8 acknowledged IRP for future annual power cost proceedings. However, PGE will not adjust
9 the inflation rate used in MONET for the 2020 NVPC forecast.

G. Short-Term Direct Access Load

10 **Q. Please describe the issue regarding the Short-Term Direct Access Load.**

11 A. AWEC recommended that PGE exclude short-term direct access load from the 2020 NVPC
12 forecast calculations.

13 **Q. Have parties resolved this issue in this settlement?**

14 A. Yes. Because any material differences in NVPC due to the loads included in the November
15 opt outs is either refunded or charged to customers as directed in PGE's Schedule 128 and has
16 been since Schedule 128 first became effective in January 2007, parties agreed that no
17 adjustments related to short-term direct access load will be made in the 2020 NVPC forecast.

III. Pricing

1 **Q. What is PGE’s current estimate of the 2020 NVPC forecast, inclusive of the items agreed**
2 **upon in the UE 359 Stipulation?**

3 A. PGE’s current 2020 NVPC forecast, inclusive of the UE 359 Stipulation terms, is
4 approximately \$395.2 million. This represents a \$33.6 million increase relative to PGE’s
5 final 2019 NVPC forecast, but a \$26.8 million decrease from PGE’s initial filing.

6 **Q. What are the base rate impacts of the currently estimated \$33.6 million increase in**
7 **Schedule 125 prices,⁵ inclusive of changes in system usage charge prices?**

8 A. Table 1 below provides preliminary estimates of the 2020 cost of service (COS) base rate
9 impacts for selected rate schedules. These estimates are subject to changes in market electric
10 and gas prices and forecasted loads, among other items.

Table 1
Estimated Base Rate Impacts

Schedule	Rate Impact
Sch 7 Residential	1.7 %
Sch 32 Small Non-residential 30 kW or less	1.7 %
Sch 83 Non-residential 31-200 kW	2.1 %
Sch 85 Secondary 201-4,000 kW	2.6 %
Sch 85 Primary 201-4,000 kW	2.5 %
Sch 89 Primary Over 4,000 kW	2.7 %
Sch 89 Subtransmission Over 4,000 kW	2.4 %
Schedule 90 Over 100 MWa	2.9 %
COS Overall	1.9 %

⁵ Preliminary estimate inclusive of the items agreed upon in this Stipulation. The cost impact estimate is subject to change in subsequent NVPC updates scheduled for October 1, November 6, and November 15, 2019.

- 1 **Q. With the supplemental items that are known, what is the expected total price change**
2 **by major rate schedule including these items?**
- 3 A. Table 2 below provides preliminary estimates of the 2020 cost of service (COS) base rate
4 impacts for selected rate schedules. It only includes estimates related to Schedules 123 and
5 143 in addition to the changes in Schedule 125 and system usage charge prices.

Table 2
Estimated Base Rate Impacts Including Schedules 125, 123*, and 143

Schedule	Rate Impact
Sch 7 Residential	0.7 %
Sch 32 Small Non-residential 30 kW or less	2.7 %
Sch 83 Non-residential 31-200 kW	2.3 %
Sch 85 Secondary 201-4,000 kW	2.8 %
Sch 85 Primary 201-4,000 kW	2.7 %
Sch 89 Primary Over 4,000 kW	2.9 %
Sch 89 Subtransmission Over 4,000 kW	2.6 %
Schedule 90 Over 100 MWa	3.1 %
COS Overall	1.6 %

* Schedule 123 price changes only include those related to Schedules 7 and 32

IV. Recommendation to the Commission

1 **Q. What is your recommendation to the Commission regarding the adjustments contained**
2 **in the Stipulation?**

3 A. The Stipulating Parties recommend and request that the Commission approve these
4 adjustments. Based on careful review of PGE's, OPUC Staff's, CUB's, and AWEC's filings;
5 consideration of the documentation provided in PGE's Minimum Filing Requirements;
6 thorough discovery conducted by parties in Docket No. UE 359, including more than 110 data
7 requests; and thorough discussion of the issues during the settlement conferences, we believe
8 the proposed adjustments represent appropriate and reasonable resolutions to all issues in this
9 docket. Rates reflecting these adjustments will be fair, just, reasonable, and provide PGE with
10 adequate revenues consistent with the standard in ORS 756.040.

11 **Q. Does this Stipulation resolve all issues raised by parties in this docket (UE 359)?**

12 A. Yes.

13 **Q. Does this conclude your testimony?**

14 A. Yes.

IV. List of Exhibits

Stipulating Parties Exhibit

Description

101

Net Variable Power Cost Stipulation

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 359

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY

2020 Annual Power Cost Update Tariff
(Schedule 125)

STIPULATION

This Stipulation is between Portland General Electric Company ("PGE"), Staff of the Public Utility Commission of Oregon ("Staff"), the Oregon Citizens' Utility Board ("CUB"), and the Alliance of Western Energy Consumers ("AWEC") (collectively, the "Stipulating Parties").

PGE filed this Annual Power Cost Update Tariff filing on April 1, 2019, for 2020 net variable power costs ("NVPC"). The filing included the minimum filing requirements required by Schedule 125 and testimony and exhibits. PGE also provided to Staff and other parties work papers in support of its filing. Since that time, Staff and intervening parties have submitted numerous data requests obtaining additional information. On June 25, 2019, Staff, CUB and AWEC filed their opening testimony in this docket. On July 16, 2019, PGE filed reply testimony. On July 25, 2019, the Stipulating Parties participated in a settlement conference. As a result of those discussions, the Stipulating Parties have reached a compromise settlement of all issues in this docket, as described in detail below.

TERMS OF STIPULATION

1. This Stipulation resolves all issues in this docket.
2. Western Energy Imbalance Market (“Western EIM”), California-Oregon Border (“COB”) Trading Margins, Wind Capacity Factor, Gas Optimization, and any remaining issues not identified below. The Stipulating Parties agree that the 2020 forecast NVPC will be reduced by \$7.0 million in a compromise settlement of the Western EIM, COB trading margins, wind capacity factor, gas optimization and all other issues not specifically addressed below. In addition, the Stipulating Parties agree to the following:
 - a. The Stipulating Parties will not propose changes to PGE’s wind forecast methodology until PGE’s next general rate case (“GRC”).
 - b. PGE will remove the transmission derate within the COB trading margin forecast methodology.
 - c. PGE will hold a workshop with the other Stipulating Parties on gas optimization prior to PGE’s initial 2021 Schedule 125 NVPC filing. Presentation materials, including any workpapers used in developing the presentation materials, will be provided to the parties no later than two weeks prior to the date of the workshop.
 - d. PGE agrees that it will propose a method for forecasting gas optimization modeling in the initial 2021 NVPC filing, which will be informed by the workshop discussed above.
3. Qualifying Facilities. The Stipulating Parties agree to continue to use PGE’s Qualifying Facilities (“QF”) track and true-up mechanism approved in PGE’s 2019 NVPC filing (Order No. 18-405), with the following modifications:

- a. PGE will derate the expected generation of new QFs that have not achieved commercial operation by November 1st of each year.¹ Additionally, PGE will make reasonable efforts to update any known changes to QF commercial operation dates (“CODs”) between November 2nd and PGE’s final November MONET update. The energy derate will be based on the most recent four-year historical annual average of actual versus projected QF costs, which for the 2020 NVPC forecast translates into a 54% derate of the expected generation of new QFs.
- b. In addition to on-line dates, the QF track and true-up mechanism will true-up actual QF generation to the final forecast of QF generation for all forecasted QF projects that have not achieved commercial operation, consistent with the projects identified in part (a) above.
- c. Cure period payments will no longer be included in the QF track and true-up mechanism.
- d. Including the above modifications, the revised methodology is as follows:
 - i. PGE will update the QF CODs through the final (November 15th) MONET update in each year’s power cost proceeding. PGE will update all project CODs through November 1st and make reasonable efforts to update any known changes to QF CODs between November 2nd and PGE’s final November MONET update.
 - ii. PGE will derate the expected generation of new QFs that have not been identified as having achieved commercial operation by PGE’s final November

¹ This will allow PGE time to process the data related to QF CODs and ensure they are reflected in the final November 15 NVPC update.

MONET update. The energy derate will be based on the most recent four-year historical annual average of actual costs versus projected QF costs.

- iii. PGE will continue to file deferred accounting applications to defer the difference between actual and forecasted QF costs to recover or credit the variance in QF costs in the next power cost proceeding.
- iv. The variance to be refunded or collected from customers will be determined by re-running the final November 15th NVPC MONET forecast and replacing (1) the estimated QF CODs with actual recorded CODs and (2) the forecast QF generation for projects subject to the derate in part (ii) above with actual QF generation.

4. Boardman 2020 Operations.

- a. PGE will move the Boardman 100% maintenance derate in MONET modeling from October 1 through December 31, 2020, to the period November 1 through December 31, 2020.
- b. PGE will model the Boardman 2020 starting coal pile at the 2019 GRC delivered coal cost including commodity, rail transportation, and dust suppression costs.

5. Wheatridge. The Stipulating Parties agree that PGE will not include a forecast of variable costs and benefits related to the Wheatridge Renewable Energy Facility in the 2020 NVPC forecast.

6. Standard Inputs in MONET. The Stipulating Parties agree that PGE will round thermal plant forced outage rates to the nearest two decimal places.

7. Inflation Rate in MONET. The Stipulating Parties agree that PGE will not adjust the inflation rate used in MONET for the 2020 NVPC forecast. The Stipulating Parties further

agree that PGE will use the inflation rate modeled in PGE's most recently acknowledged Integrated Resource Plan for future annual power cost proceedings.

8. Short Term Direct Access. There will be no adjustment related to Short Term Direct Access load in the 2020 NVPC forecast.
9. The Stipulating Parties recommend and request that the Commission approve the adjustments and provisions described herein as appropriate and reasonable resolutions of all issues in this docket.
10. The Stipulating Parties agree that this Stipulation is in the public interest, and will contribute to rates that are fair, just and reasonable, consistent with the standard in ORS 756.040.
11. The Stipulating Parties agree that this Stipulation represents a compromise in the positions of the Stipulating Parties. Without the written consent of all of the Stipulating Parties, evidence of conduct or statements, including but not limited to term sheets or other documents created solely for use in settlement conferences in this docket, are confidential and not admissible in the instant or any subsequent proceeding, unless independently discoverable or offered for other purposes allowed under ORS 40.190.
12. The Stipulating Parties have negotiated this Stipulation as an integrated document. The Stipulating Parties, after consultation, may seek to obtain Commission approval of this Stipulation prior to evidentiary hearings. If the Commission rejects all or any material part of this Stipulation, or adds any material condition to any final order that is not consistent with this Stipulation, each Stipulating Party reserves its right: (i) to withdraw from the Stipulation, upon written notice to the Commission and the other Parties within five (5) business days of service of the final order that rejects this Stipulation, in whole or material

part, or adds such material condition; (ii) pursuant to OAR 860-001-0350(9), to present evidence and argument on the record in support of the Stipulation, including the right to cross-examine witnesses, introduce evidence as deemed appropriate to respond fully to issues presented, and raise issues that are incorporated in the settlements embodied in this Stipulation; and (iii) pursuant to ORS 756.561 and OAR 860-001-0720, to seek rehearing or reconsideration, or pursuant to ORS 756.610 to appeal the Commission's final order. Nothing in this paragraph provides any Stipulating Party the right to withdraw from this Stipulation as a result of the Commission's resolution of issues that this Stipulation does not resolve.

13. This Stipulation will be offered into the record in this proceeding as evidence pursuant to OAR 860-001-0350(7). The Parties agree to support this Stipulation throughout this proceeding and in any appeal, provide witnesses to support this Stipulation (if specifically required by the Commission), and recommend that the Commission issue an order adopting the settlements contained herein. By entering into this Stipulation, no Stipulating Party shall be deemed to have approved, admitted or consented to the facts, principles, methods or theories employed by any other Stipulating Party in arriving at the terms of this Stipulation. Except as provided in this Stipulation, no Stipulating Party shall be deemed to have agreed that any provision of this Stipulation is appropriate for resolving issues in any other proceeding.
14. This Stipulation may be signed in any number of counterparts, each of which will be an original for all purposes, but all of which taken together will constitute one and the same agreement.

DATED this 5th day of September, 2019.



PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

OREGON CITIZENS' UTILITY BOARD

ALLIANCE OF WESTERN
ENERGY CONSUMERS

DATED this 30th day of September, 2019.

PORTLAND GENERAL ELECTRIC
COMPANY

A handwritten signature in black ink, appearing to be 'J. G. G.', written over a horizontal line.

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

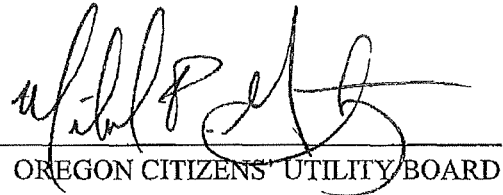
OREGON CITIZENS' UTILITY BOARD

ALLIANCE OF WESTERN
ENERGY CONSUMERS

DATED this 3rd day of September, 2019.

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON



A handwritten signature in black ink, appearing to be 'Michael P. ...', is written over a horizontal line.

OREGON CITIZENS' UTILITY BOARD

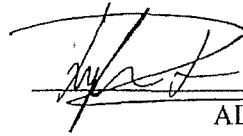
ALLIANCE OF WESTERN
ENERGY CONSUMERS

DATED this 14th day of September, 2019.

PORTLAND GENERAL ELECTRIC
COMPANY

STAFF OF THE PUBLIC UTILITY
COMMISSION OF OREGON

OREGON CITIZENS' UTILITY BOARD

A handwritten signature in black ink, appearing to be "J. P. ...", written over a horizontal line.

ALLIANCE OF WESTERN
ENERGY CONSUMERS